



# PETROLEUM WATCH

## California Energy Commission

### March 2015

#### ***Recent Petroleum News and Outside Analyses***

##### **Refining News**

- **Tesoro Golden Eagle Shutdown:** On February 6, 2015, the Tesoro Golden Eagle refinery shut down its operations in response to United Steelworkers labor union contract disputes at the refinery.
- **ExxonMobil Torrance Maintenance:** On February 16 ExxonMobil shut down a fluid catalytic cracker unit due to an operational issue at its refinery in Torrance, California.
- **ExxonMobil Torrance Explosion:** On the morning of February 18 a large explosion occurred at ExxonMobil's Torrance refinery, triggering emergency procedures. There were four reported minor injuries to contractors and the refinery continues to run at reduced rates as the Department of Occupational Safety and Health investigates the incident. The Los Angeles area refinery produces roughly 10 percent of California's gasoline and has a processing capacity of 155,000 barrels a day of crude oil.

##### **State and Federal Policy News**

- **Crude-by-Rail Permitting:** On February 4 the City of Benicia in the San Francisco Bay Area delayed approval of Valero Energy Corporation's proposed crude-by-rail facility, citing a desire to continue review of the draft environmental impact report provided for the project.

##### **Outside Analysis**

- **EIA Analysis:** On February 12, 2015, EIA published an analysis showing that Saudi Arabia is well prepared to handle low crude oil prices due to its large sovereign wealth fund. This is despite the fact that 89 percent of the country's revenue came from crude oil exports in 2014.  
<http://www.eia.gov/todayinenergy/detail.cfm?id=19971>
- **EIA Analysis:** On February 19 EIA published an analysis of the relationship between crude oil prices and the purchasing power of the dollar. EIA notes recent increases in U.S. dollar value and crude oil prices.  
[http://www.eia.gov/petroleum/weekly/archive/2015/150219/includes/analysis\\_print.cfm](http://www.eia.gov/petroleum/weekly/archive/2015/150219/includes/analysis_print.cfm)

## Analysis of Current Events

In February, there were two refinery outages that tightened California fuel markets for gasoline and diesel. After completing planned maintenance at the beginning of February, the Tesoro Golden Eagle refinery in Martinez remained idled due to a strike by the United Steelworkers labor union.<sup>1</sup> On the morning of February 18 ExxonMobil Torrance suffered an explosion that occurred during maintenance of a unit integral to gasoline production.<sup>2</sup>

The tightening market for both gasoline and diesel is observable through spot price differentials between California fuel commodity prices minus the New York Mercantile Exchange (NYMEX) price. A large positive differential, where the California price is greater than the NYMEX price, means the market is signaling a reduced supply of fuel. (Market participants are eager to buy fuel above the national price to keep resellers supplied.) A large negative differential, where the California price is below the NYMEX price, means the market is signaling an oversupply of fuel. (Market participants have plenty of fuel on hand and will buy if there is a discount.) Seen in Table 1 and Figures 1 and 2, these differentials have risen since the last *Petroleum Watch*, signaling a tightening of the market for transportation fuels compared to last month when the market signaled supplies were ample.

**Table 1: California Spot Prices for CARBOB<sup>3</sup>  
and CARB<sup>4</sup> Diesel Differential to the NYMEX  
(cents per gallon)**

	Gasoline Differential	Diesel Differential.
1/13/2015		
San Francisco	-5.55	-12
Los Angeles	-18.05	-12.5
2/18/2015		
San Francisco	+31.77	+12.04
Los Angeles	+43.96	+9.66

Source: Energy Information Administration and Oil Price Information Service

Tesoro Golden Eagle was performing maintenance in January, but by early February the refinery remained completely idled due to a labor strike, which tightened the California fuels market. The market reacted to this information by increasing the San Francisco differential for gasoline from -\$0.06 to \$0.32. The San Francisco diesel differential moved from -\$0.12 to \$0.12. Since statewide gasoline inventories have been persistently lower than the 5-year high/low range since late June 2014, this has made looking at statewide gasoline and blend stock inventories an unreliable indicator of the disposition of the California gasoline market (seen in Figure 3).

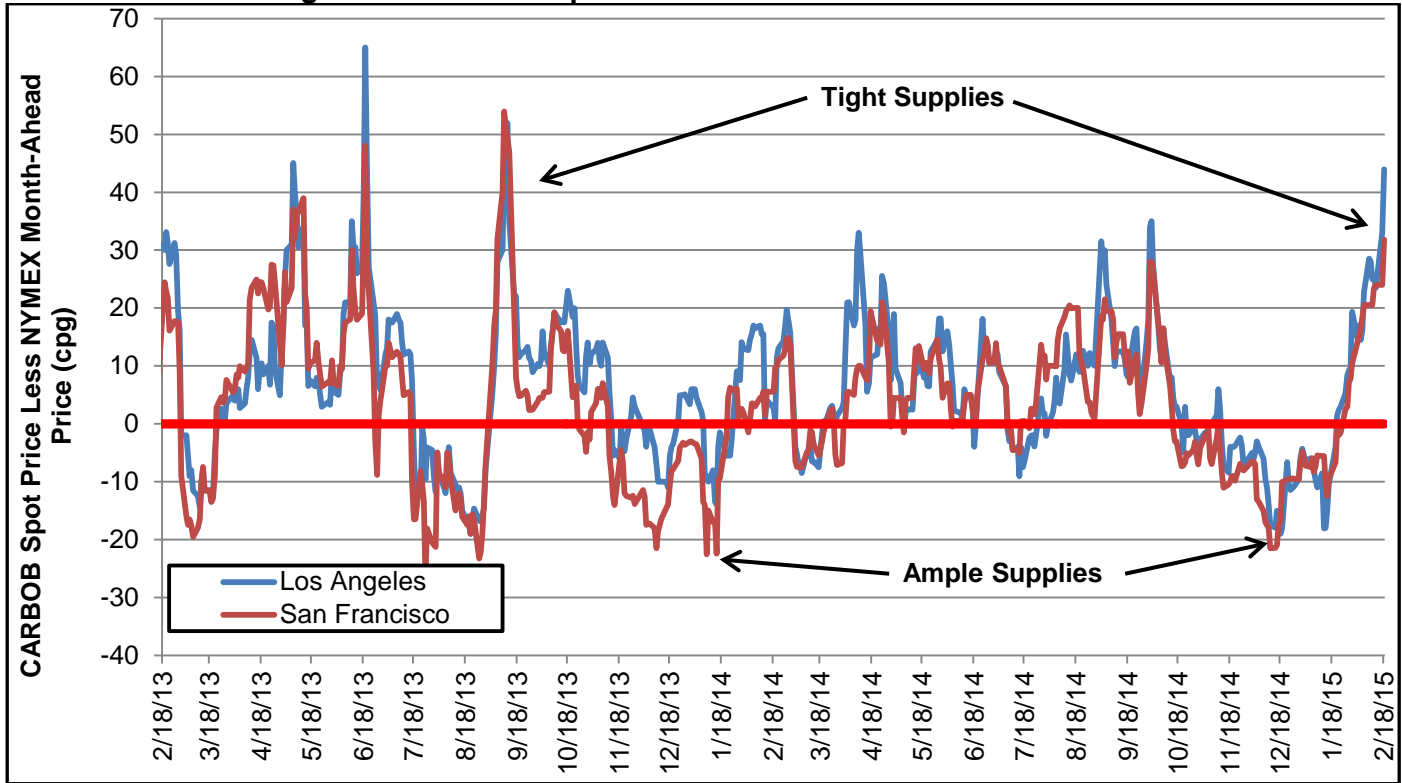
<sup>1</sup> <http://www.bloomberg.com/news/articles/2015-02-03/tesoro-s-california-dominance-targeted-in-union-strikes>

<sup>2</sup> <http://www.cnn.com/id/102435803#>

<sup>3</sup> CARBOB stands for California Reformulated Blendstock for Oxygenate Blending. This is the base gasoline that is blended with ethanol to create finished gasoline for dispensing at service stations.

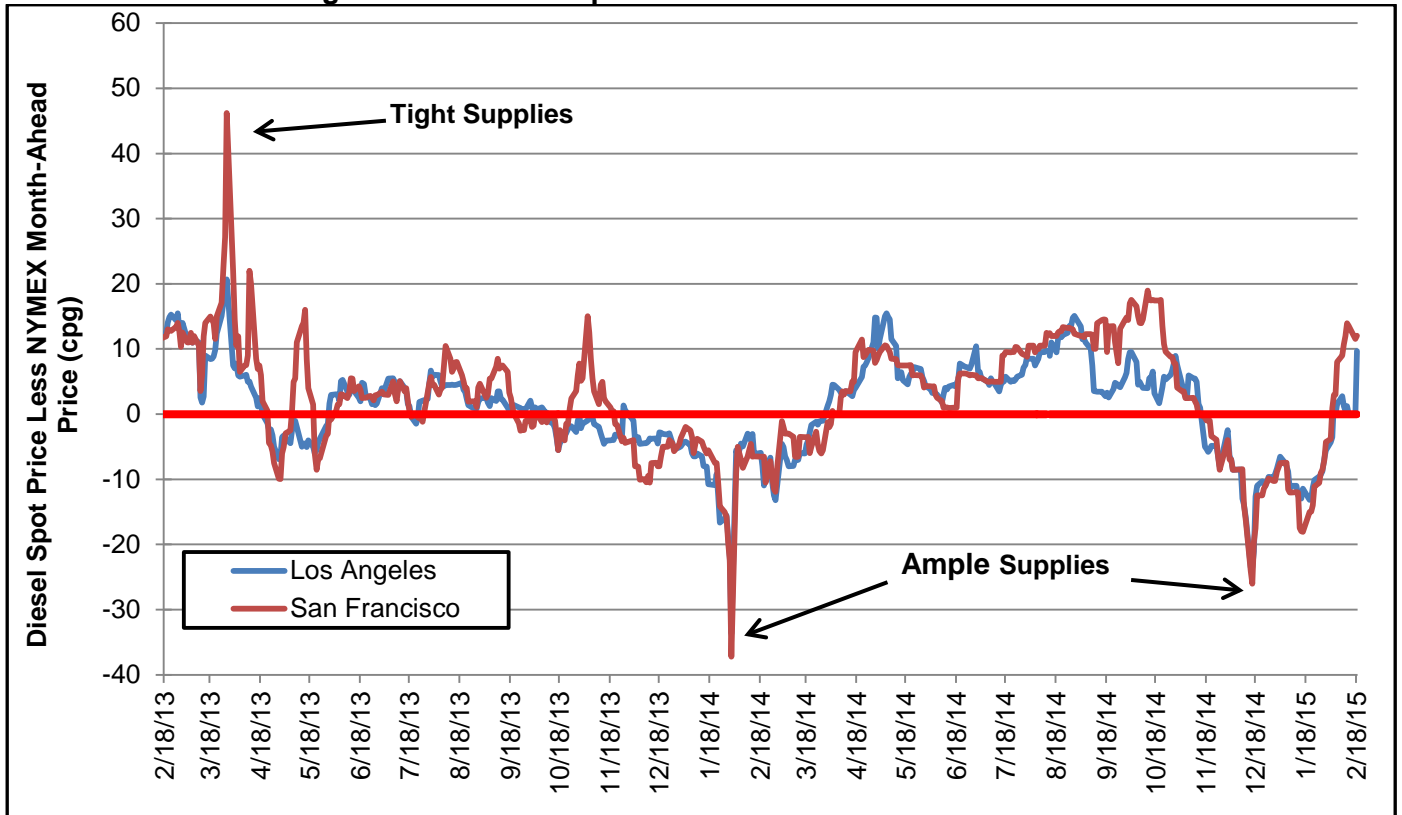
<sup>4</sup> CARB stands for California Air Resources Board. The CARB diesel is the only specification of diesel approved for use in California.

**Figure 1: California Spot CARBOB Price Differential to NYMEX**



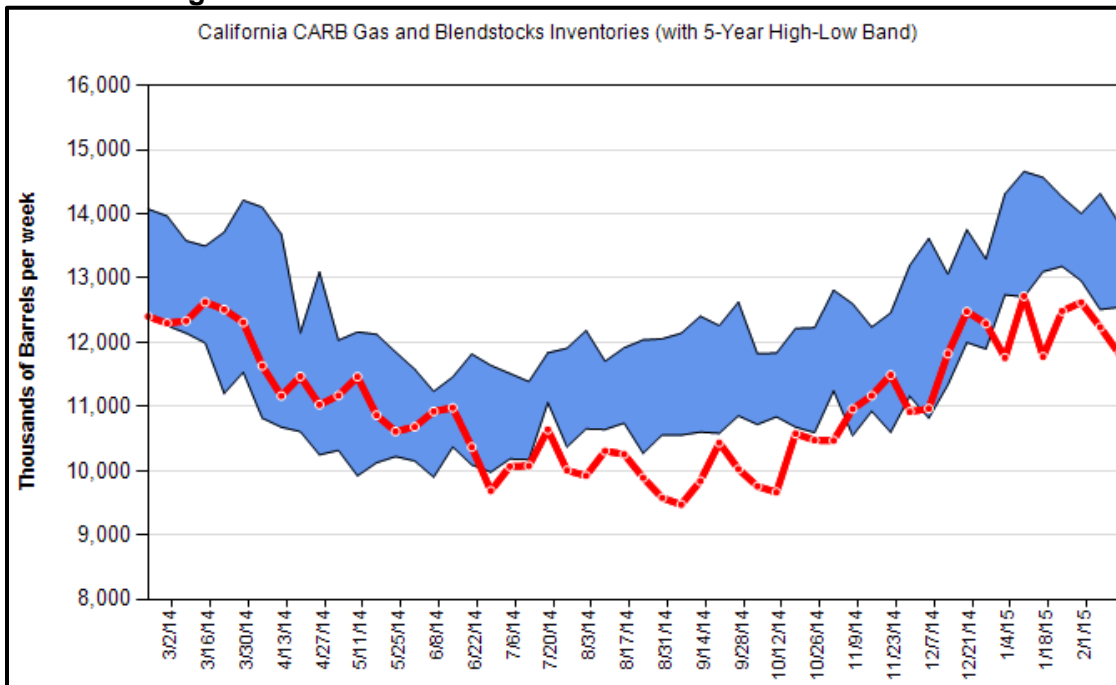
Source: Energy Information Administration and Oil Price Information Service

**Figure 2: California Spot Diesel Price Differential to NYMEX**



Source: Energy Information Administration and Oil Price Information Service

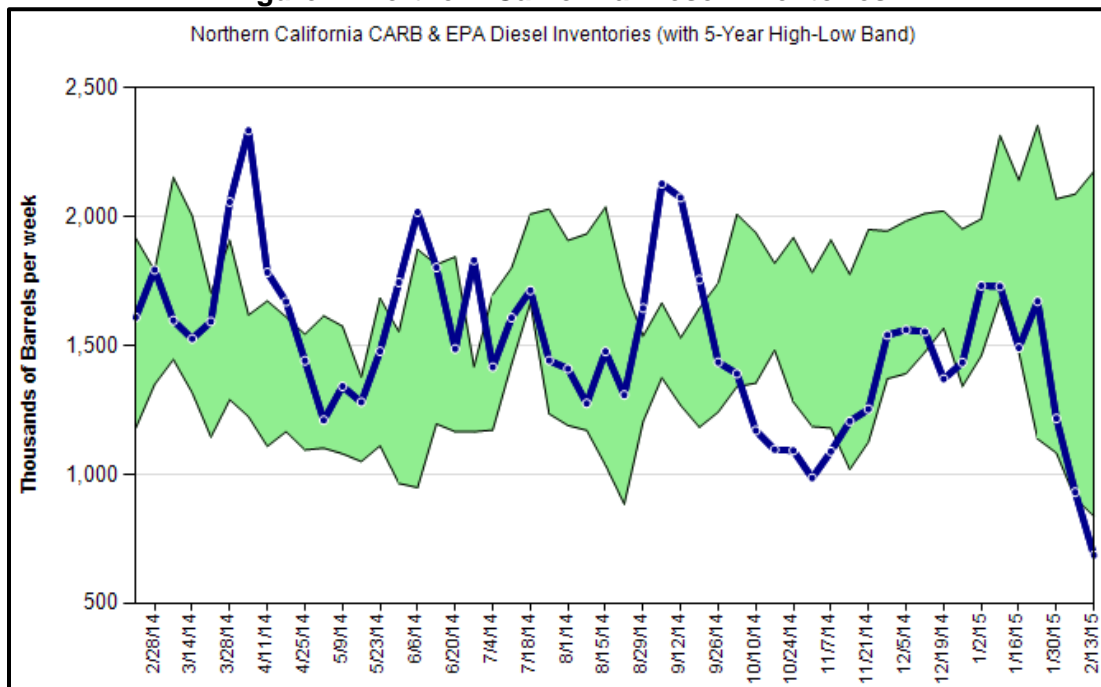
**Figure 3: California Gasoline and Blendstocks Inventories**



Source: Petroleum Industry Information Reporting Act data

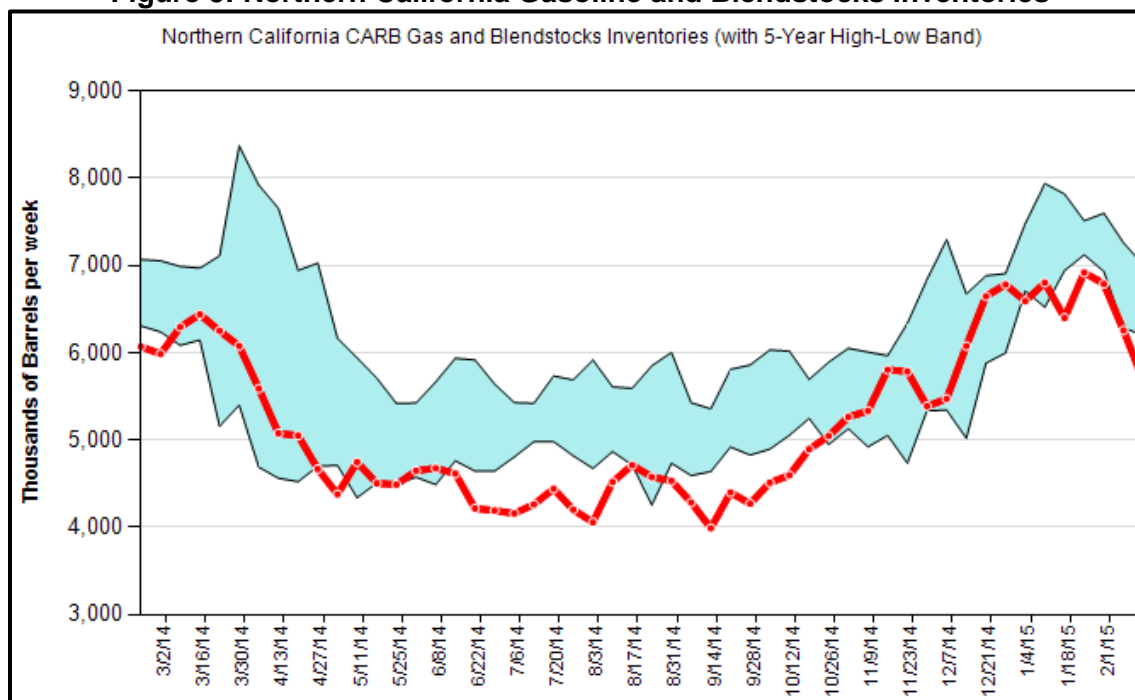
While total state inventories and production figures have not been informative, regional inventories have been helpful in showing the current market disposition. Currently, Northern California's diesel inventory levels show abnormally low levels of diesel (Figure 4) and have been falling since mid-January. These inventories did remain within the 5-year high/low band until February 6 but as these levels fell, the market signaled a tightening in diesel as the San Francisco-to-NYMEX differential moved to \$0.08 on that day (Figure 2).

**Figure 4: Northern California Diesel Inventories**



Source: Petroleum Industry Information Reporting Act data

**Figure 5: Northern California Gasoline and Blendstocks Inventories**



Source: Petroleum Industry Information Reporting Act data

Northern California gasoline inventory levels were within normal range until the beginning of January (Figure 5). During this period, the San Francisco to NYMEX differential remained low from  $-\$0.07$  to  $\$0.07$  until crossing the  $\$0.10$  level on January 30, when the differential reached  $\$0.104$ . Unsurprisingly, the low gasoline inventories coupled with the February strike nearly doubled the differential to  $\$0.205$  within the week.

**Table 2: San Francisco CARBOB Price and Differential to NYMEX (cents per gallon)**

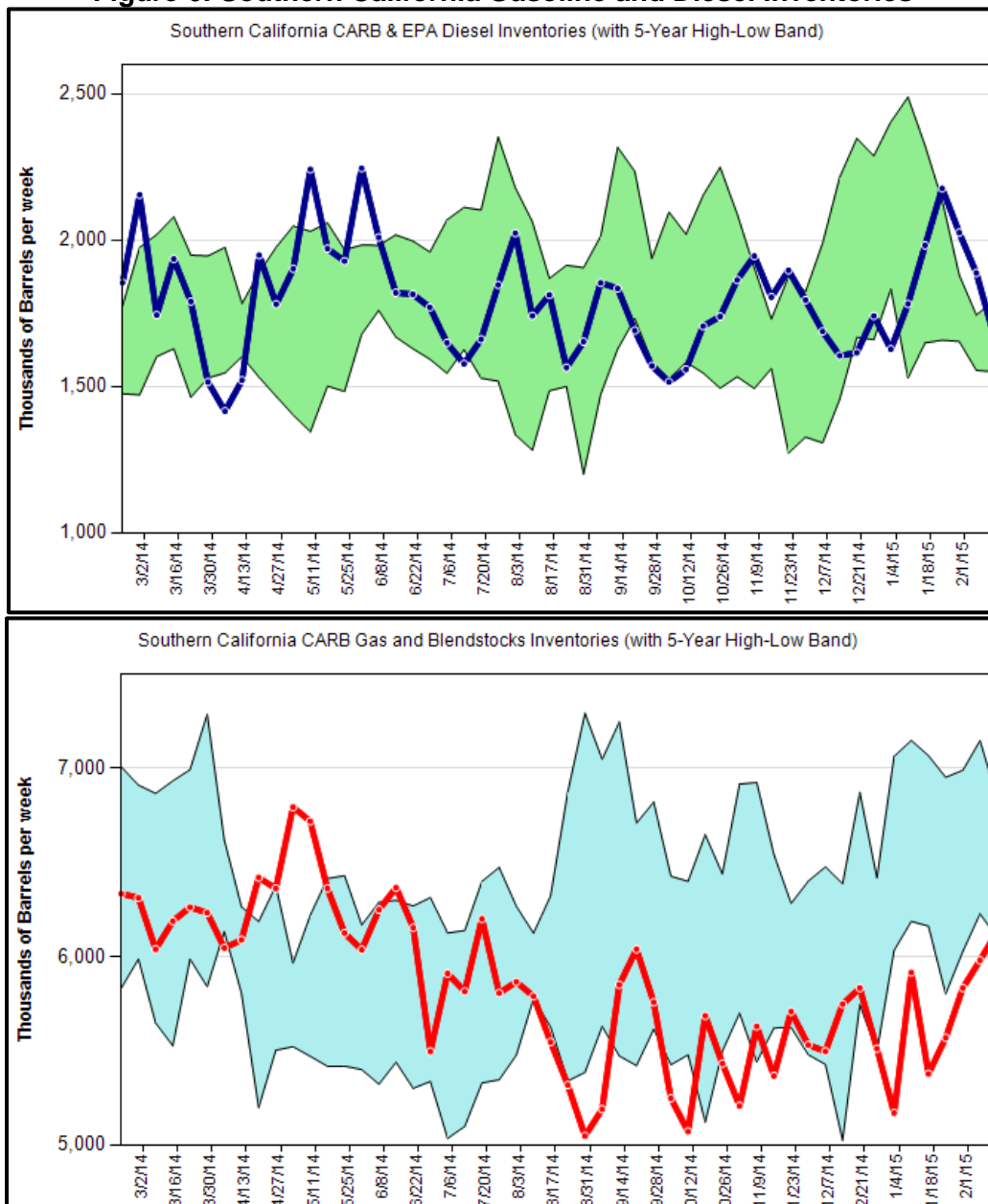
Date	SF NYMEX Differential
1/27/2015	2.91
1/28/2015	7.2
1/29/2015	7.73
1/30/2015	10.38
2/2/2015	13.96
2/3/2015	15.03
2/4/2015	16.47
2/5/2015	18.48
2/6/2015	20.51

Source: Energy Information Administration and Oil Price Information Service

ExxonMobil Torrance suffered an emergency shutdown on the morning of February 18, 2015, increasing the Los Angeles gasoline differential from  $\$0.33$  to  $\$0.44$ . The Los Angeles diesel differential rose from  $\$0.00$  to

\$0.09, likely due to the Torrance refinery limiting diesel production and specializing in gasoline. These relationships are hinted at in the supply disposition of Southern California's diesel and gasoline inventories, seen in Figure 6. Southern California diesel inventory levels were healthy in the earlier portion of 2014 compared to the 5-year high/low band, yet gasoline inventories have been below the historical low range since August 2014. This leads to Southern California vulnerability to sudden price changes in the gasoline market and to a higher overall differential to the NYMEX.

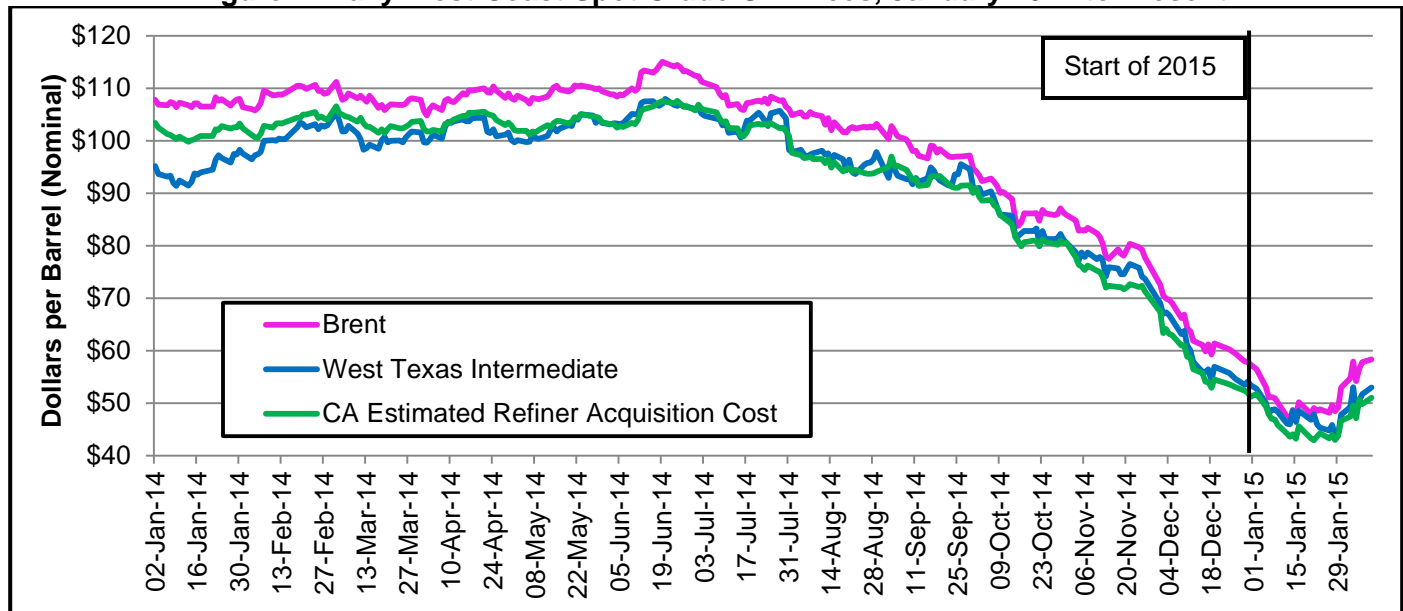
**Figure 6: Southern California Gasoline and Diesel Inventories**



Source: Petroleum Industry Information Reporting Act data

## Crude Oil Prices

**Figure 7: Daily West Coast Spot Crude Oil Prices, January 2014 to Present**



Source: Energy Information Administration and Oil Price Information Service

California Estimated Refiner Acquisition Cost<sup>5</sup> (CA RAC) of crude reached a 2015 daily price low on January 21, at \$49.90 a barrel. Year-to-date daily lows for Brent and West Texas Intermediate Oil (WTI) occurred on January 26 at \$48.16 and January 28 at \$44.08, respectively. Prices for each of the indices increased as of February 17 to \$60.78 a barrel for Brent and \$53.56 a barrel for WTI. On February 9 CA RAC was estimated at \$50.99 a barrel. Comparing the average price of WTI and Brent for February 2014 with February 2015, crude oil prices are 49 and 48 percent lower than this time last year, respectively.

These increases in crude oil prices have been accompanied by a leveling in the relative strength of the U.S. dollar on the international exchange markets. Using the FRED<sup>6</sup> index of the U.S. dollar against the major currencies, the February 2015 average purchasing power of the dollar is roughly 16 percent higher than February 2014. Looking at year-to-date differences, February 2015 is only 2 percent higher than the January 2015 average, leading to the conclusion that increases in prices on the global crude oil markets are a result of lower availability of crude oil that can be sold at those price points. One example of this squeezing out of higher price crude oil streams may be occurring with U.S. shale crude oil production, which has an estimated cost of production of roughly \$50 to \$90 a barrel.<sup>7</sup>

<b>Crude Oil Prices</b>	
<b>February 2014 vs 2015:</b>	
<b>(Percent Change)</b>	
▪ WTI:	49% Lower
▪ Brent:	48% Lower
▪ CA RAC:	52% Lower
<b>Final January Averages:</b>	
<b>(Dollars per Barrel)</b>	
▪ WTI:	\$47.22
▪ Brent:	\$49.80
▪ CA RAC:	\$45.19
<b>February 9, 2015 Prices:</b>	
<b>(Dollars per Barrel)</b>	
▪ WTI:	\$52.99
▪ Brent:	\$58.34
▪ CA RAC:	\$50.99

<sup>5</sup> CA Estimated Refiner Acquisition Cost was created as a proxy to determine the average price of crude oil for California refineries. It is created using California refinery input proportions of California crude, Alaskan crude, and foreign crude, then multiplying those proportion by San Joaquin Valley, Alaskan North Slope, and Brent crude oil prices respectively.

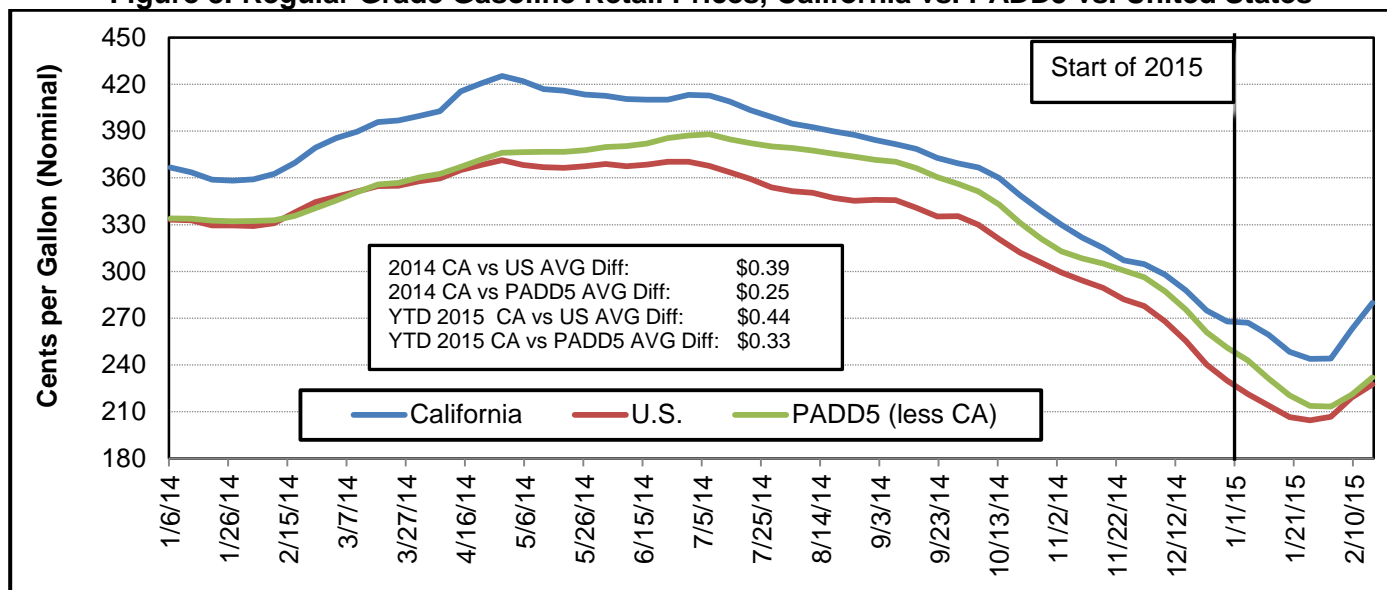
<sup>6</sup> Federal Reserve Bank of St. Louis (FRED).

<sup>7</sup> LCM Research based on Booz Allen/IEA data (Morse, 2009).



## Gasoline and Diesel Retail Prices and Margins

**Figure 8: Regular Grade Gasoline Retail Prices, California vs. PADD5 vs. United States**



Source: Energy Information Administration

Gasoline price changes continue to match changes in crude oil prices. The 2015 average weekly low price for the U.S. and California regular gasoline occurred the week of January 26 at \$2.04 and \$2.44 respectively. For PADD 5 less California<sup>8</sup>, the low occurred one week later at \$2.13. As of February 16 prices rose in all areas from their 2015 lows to \$2.80 in California, \$2.27 in the United States, and \$2.32 for PADD 5 less California. This was a 15 percent increase in regular gasoline prices for California, 11 percent increase for the United States, and 9 percent increase in PADD 5 less California area over the 2015 lows. When compared to the February 2014 average price for regular gasoline, week of February 16 prices are 24 percent lower than last year for California, 32 percent lower for the United States, and 31 percent lower for the PADD 5 less California area.

The year-to-date average difference between California and U.S. retail gasoline price is \$0.44, a \$0.05 increase over the 2014 average difference. For California and the PADD 5 less California area, that difference is smaller at \$0.33 but \$0.08 more than that 2014 average difference. Week of February 16 differences stand at \$0.52 for California and the United States and \$0.48 for California and the PADD 5 less California area. With the explosion at Exxon Torrance refinery on February 18 gasoline prices are expected to increase relative to the U.S. average as this refinery produces roughly 10 percent of California's gasoline.<sup>9</sup>

### **Regular Gasoline Prices**

#### **February 2014 vs 2015: (Percent Change)**

- CA: 29% Lower
- U.S.: 35% Lower
- PADD 5 (w/o CA): 34% Lower

#### **January 2015 Average: (Dollars per Gallon)**

- CA: \$2.55
- U.S.: \$2.12
- PADD 5 (w/o CA): \$2.27

#### **Week of 2/16/2015: (Dollars per Gallon)**

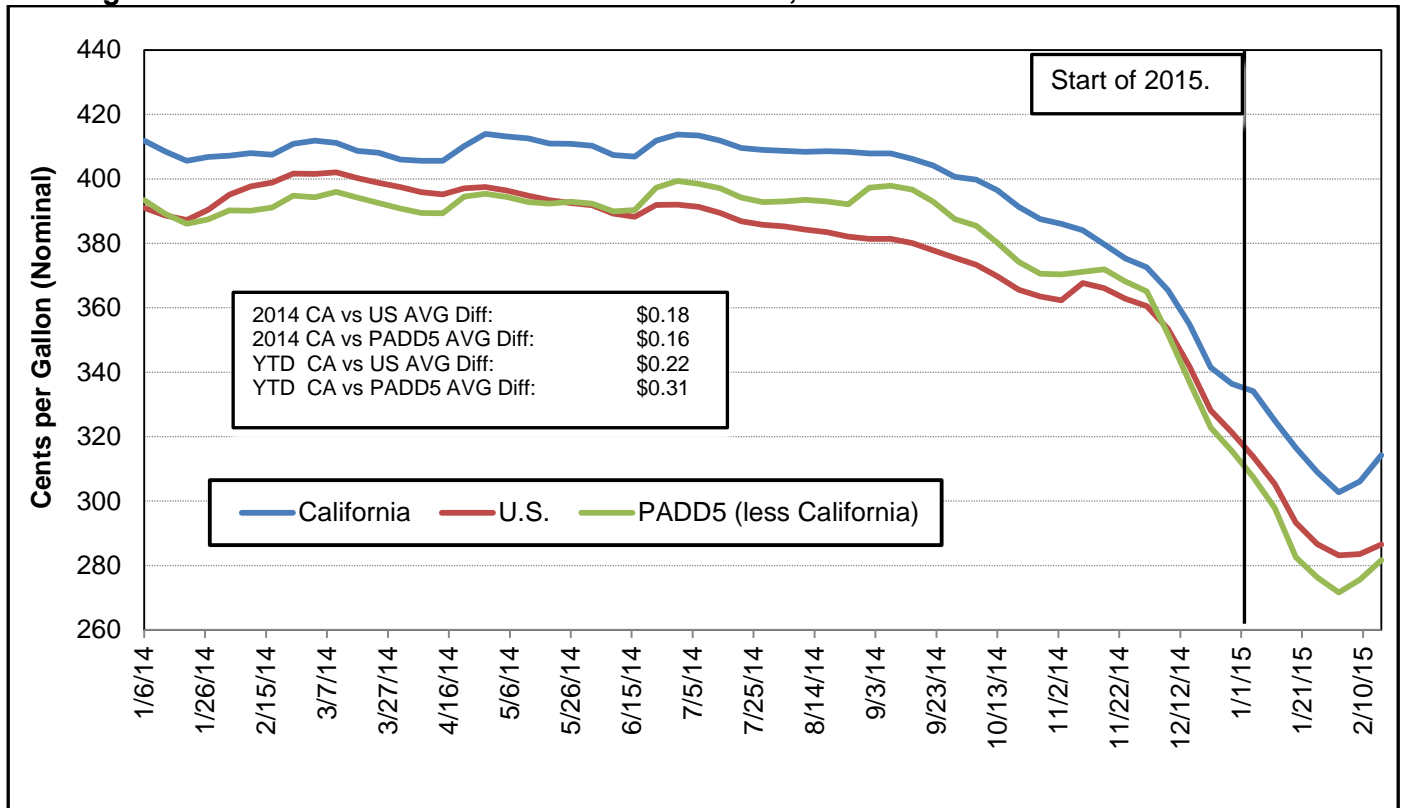
- CA: \$2.80
- U.S.: \$2.27
- PADD 5 (w/o CA): \$2.32

<sup>8</sup> PADD stands for *Petroleum Administration for Defense Districts*. PADD 5 includes the states of Hawaii, Alaska, Washington, Oregon, California, Nevada, and Arizona. West Coast is being defined as all PADD 5 states minus California for this report.

<sup>9</sup> CNBC news report: <http://www.cnbc.com/id/102435803#>.



**Figure 9: No.2 Diesel Ultra-Low-Sulfur Retail Prices, California vs. PADD5 vs. United States**



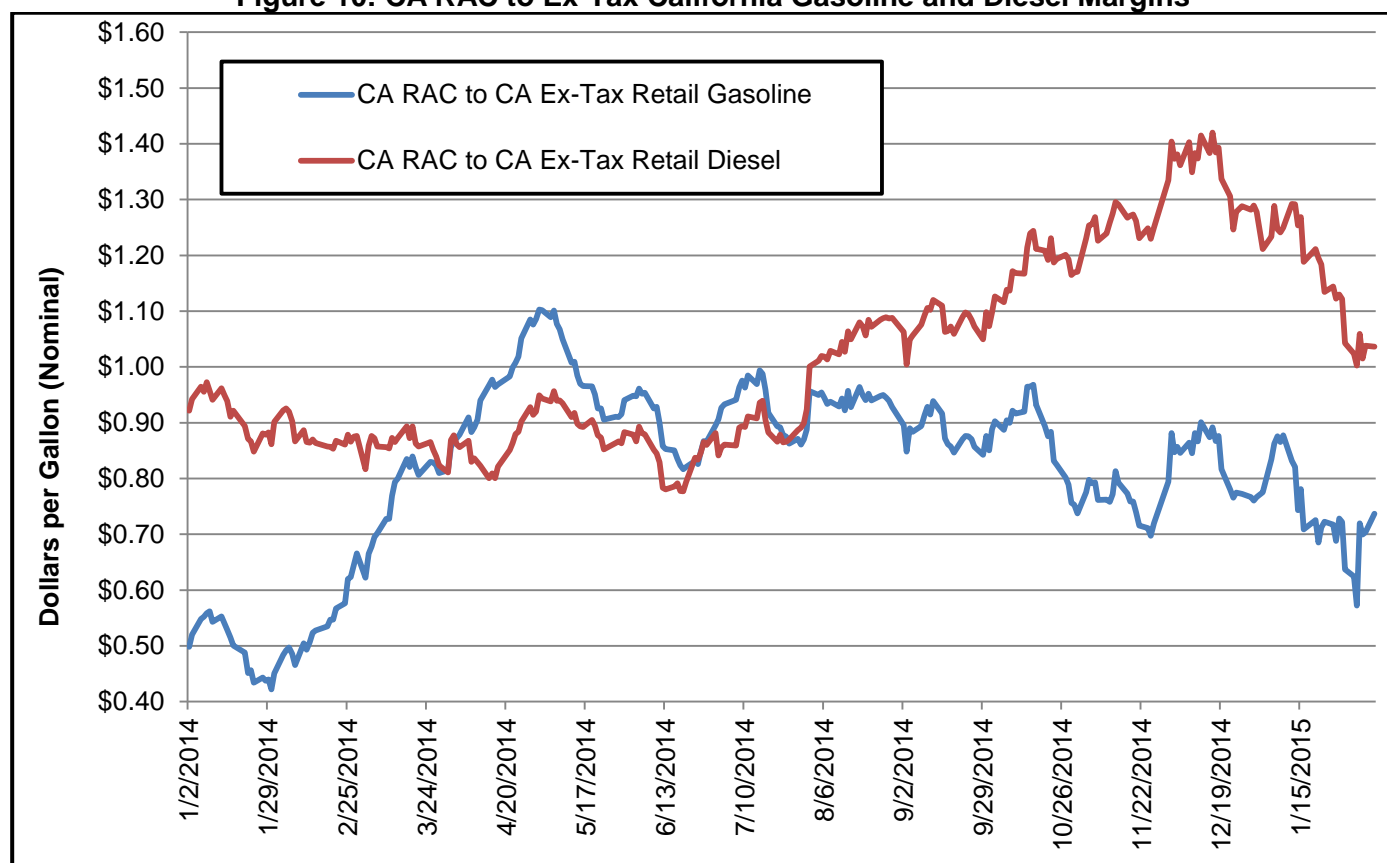
Source: Energy Information Administration

Diesel price changes were roughly similar to gasoline and crude oil prices. The 2015 average weekly low price for the United States, California, and the PADD 5 less California diesel occurred in the week of February 2 at \$2.83, \$3.02, and \$2.71 respectively. As of February 16 prices rose in all areas from the 2015 lows to \$3.14 in California, \$2.86 in the United States, and \$2.81 for PADD 5 less California. This was a 4 percent increase in regular gasoline prices for California, 11 percent increase for the United States, and 9 percent increase in PADD 5 less California area over the 2015 lows. When compared to the February 2014 average price for diesel, week of February 16 prices are 23 percent lower than last year for California, 28 percent lower for the United States, and 28 percent lower for the PADD 5 less California area.

The year-to-date average difference between California and U.S. retail diesel price is \$0.22, a \$0.04 increase over the 2014 average difference. For California and the PADD 5 less California area, that difference was \$0.31, \$0.15 more than that 2014 average difference. Comparing the California and U.S. February 2015 average differences (\$0.23) to the February 2014 average difference shows that diesel prices are \$0.13 higher in California than this time last year, relative to the United States. The same comparison with the PADD 5 less California area shows that the 2015 average (\$0.31) is \$0.14 cents higher than the difference was in February 2014 (\$0.17).

Diesel Prices	
February 2014 vs 2015:	
(Percent Change)	
CA:	25% Lower
U.S.:	29% Lower
PADD 5	
(w/o CA):	29% Lower
January 2015 Average:	
(Dollars per Gallon)	
CA:	\$3.21
U.S.:	\$3.00
PADD 5	
(w/o CA):	\$2.91
Week of 2/16/2015:	
(Dollars per Gallon)	
CA:	\$3.14
U.S.:	\$2.87
PADD 5	
(w/o CA):	\$2.82

**Figure 10: CA RAC to Ex-Tax California Gasoline and Diesel Margins**



Source: Energy Information Administration and Oil Price Information Service

Starting with this March 2015 issue, CA RAC will be used in the margin analysis instead of Alaska North Slope spot prices since CA RAC should be a better representation of crude oil price paid by California refiners. To date, average CA RAC to ex-tax<sup>10</sup> retail regular gasoline for February 2015 (February 1 to February 9) was \$0.676 and for retail ex-tax diesel was \$1.029 (see Figure 10). This is a \$0.09 and \$0.17 decrease for these margins, respectively, when compared to average January margins (\$0.766 and \$1.202). While margins seem to have decreased when compared to the previous month, when compared to February 2014, the February 2015 average gasoline margin is \$0.13 larger, and the February 2015 average diesel margin is \$0.15 larger. February 2015 margins are still lower than the monthly average highs for 2014, which occurred in May for gasoline (\$0.99) and December for diesel (\$1.35). With the unplanned shutdown of the ExxonMobil Torrance refinery, it is expected that the gasoline margin should rise, increasing the February margin value by the time of the next *Petroleum Watch* publication. The Tesoro Golden Eagle refinery shutdown appears not to have influenced statewide diesel margins in January and February, as they decreased relative to the December 2014 margin value.

### **Crude to Ex-Tax Retail Margins**

#### **February 2014 vs 2015: (Percent Change)**

- Gasoline: 25% Lower
- Diesel: 17% Lower

#### **January 2015 Average: (Dollars per Gallon)**

- Gasoline: \$0.77
- Diesel: \$1.20

#### **February 9, 2015 Margin: (Dollars per Gallon)**

- Gasoline: \$0.74
- Diesel: \$1.04

<sup>10</sup> "Ex-tax" refers to the removing of all California taxes on the price of fuel. This is done to remove any distortions from taxes that may appear in this calculation.